

Applicant: Wang
Serial No:
Docket No: 669-77 CON
Page 2

attaching said coated bond wires directly onto said bonding pads and directly onto terminal pads disposed on said substrate.

16. (New) The method of packaging a high density integrated circuit according to Claim 15, wherein said bonding pads are located at selected locations on said microchip.

a1
17. (New) The method of packaging a high density integrated circuit according to Claim 16, wherein said bonding pads comprise a metallized aluminum material.

201337
18. (New) The method of packaging a high density integrated circuit according to Claim 15, wherein said coated bond wires are selected from a group consisting of gold, aluminum, copper and combinations thereof.

19. (New) The method of packaging a high density integrated circuit according to Claim 15, wherein said bonding pads and said bond wires are comprised of same material.

20. (New) The method of packaging a high density integrated circuit according to Claim 15, wherein said coated bond wires are attached onto said bonding pads by a ball shaped joint.

Applicant: Wang
Serial No:
Docket No: 669-77 CON
Page 3

21. (New) The method of packaging a high density integrated circuit according to Claim 15, wherein said coated bond wires are finer than 15 microns and have an oxidized outer insulation.

22. (New) The method of packaging a high density integrated circuit according to Claim 15, wherein a plurality of microchips are disposed on said substrate and said bonding pads are located on the microchips.

a1
mb47
23. (New) The method of packaging a high density integrated circuit according to Claim 22, including attaching said coated bond wires to said bonding pads to thereby connect adjacent microchips.

24. (New) A method of packaging a high density integrated circuit having at least one semiconductor microchip disposed on a substrate having a plurality of terminal pads provided thereon, comprising:

forming a plurality of bonding pads in a plurality of rows and columns over a surface of said microchip;

providing bond wires coated with an insulating material;

connecting selected bonding pads on said microchip with selected terminal pads on said substrate with coated bond.

Applicant: Wang
Serial No:
Docket No: 669-77 CON
Page 4

25. (New) The method of packaging a high density integrated circuit according to Claim 24, including coating the integrated circuit with a protective encapsulating material.

26. (New) The method of packaging a high density integrated circuit according to Claim 24, wherein said bonding pads are located at selected locations over the entire surface of said microchip.

a1
sub B57
27. (New) The method of packaging a high density integrated circuit according to Claim 24, wherein a plurality of semiconductor microchips are disposed on said substrate, and interconnections among selected bonding pads on said microchips are provided by insulated bond wires bonded to said selected bonding pads.

28. (New) The method of packaging a high density integrated circuit according to Claim 27, wherein said insulated bond wires are selected from a group consisting of gold, aluminum, copper and combinations thereof.

29. (New) A high density integrated circuit package comprising
at least one semiconductor microchip element disposed on a substrate having a plurality of terminal pads provided thereon,

Applicant: Wang
Serial No:
Docket No: 669-77 CON
Page 5

a plurality of connection bonding pads formed at selected locations over an active surface of said microchip,

bond wires having insulation therein, said bond wires being connected by ball bonding directly to said bonding pads on said microchip and said terminal pads on said substrate, wherein said insulation extends throughout said bond wire.

a¹
30. (New) The high density integrated circuit according to Claim 29, wherein said bonding pads are located in a plurality of rows and columns dispersed over the active surface of said microchip.

31. (New) The high density integrated circuit according to Claim 29, wherein said insulated bond wires are selected from a group consisting of gold, aluminum, copper and combinations thereof.

32. (New) The high density integrated circuit according to Claim 29, wherein said bonding pads and said insulated bond wires are comprised of the same material.

33. (New) The high density integrated circuit according to Claim 32, wherein said bonding pads are comprised of metallized aluminum material and said insulated bond wires are insulated aluminum alloy wires having an oxidized outer insulation.

Applicant: Wang
Serial No:
Docket No: 669-77 CON
Page 6

34. (New) The high density integrated circuit according to Claim 29, further include a protective encapsulating material applied over said microchip.

35. (New) The high density integrated circuit according to Claim 29, wherein said bonding pads are selectively located on the surface of said microchip.

36. (New) The high density integrated circuit according to Claim 29, further include a plurality of microchips disposed on said substrate, wherein said plurality of microchips have said bonding pads selectively located over the surface thereon.

37. (New) The high density integrated circuit according to Claim 36, wherein a plurality of said bond wires connect adjacent chips.